

CLAIMS

1. A solid oxide fuel cell provided with a power cell (1) formed by arranging a fuel electrode layer (4) on one surface
5 of a solid electrolyte layer (3) and an air electrode layer (2) on the other surface thereof, wherein:

said solid electrolyte layer consists of a two layer structure comprising a first electrolyte layer (3a) made of a ceria based oxide material and a second electrolyte layer
10 (3b) made of a lanthanum gallate based oxide material; and

said second electrolyte layer is formed on the side of said air electrode layer.

2. The solid oxide fuel cell according to claim 1, wherein
15 said first electrolyte layer (3a) is formed thinner than said second electrolyte layer (3b).

3. A solid oxide fuel cell provided with a power cell (1) formed by arranging a fuel electrode layer (4) on one surface
20 of a solid electrolyte layer (3) and an air electrode layer (2) on the other surface thereof, wherein:

the composition ratio of component materials in said fuel electrode layer is graded along the thickness thereof.

25 4. The solid oxide fuel cell according to claim 3, wherein said fuel electrode layer (4) has a layered structure comprising two or more layers, and the composition ratio of component materials in said fuel electrode layer is graded

along the layering direction thereof by varying the composition ratio of component materials in the respective layers.

5. The solid oxide fuel cell according to claim 3 or 4, wherein
5 the material composition for said fuel electrode layer (4)
is a mixture of Ni and CeSmO_2 , wherein the composition ratio
of component materials is graded along the thickness thereof
in such a way that the quantity of Ni is less than the quantity
of CeSmO_2 near the interface with said solid electrolyte layer
10 (3), and the mixing ratio of Ni is gradually increased with
an increasing distance away from the interface.